NORTH CAROLINA
DIVISION OFAIR QUALITY
Application Review

Permit Issue Date: xx

Region: Raleigh Regional Office
County: Person
NC Facility ID: 7300082
Inspector's Name: Steven Carr
Date of Last Inspection: 02/11/2015
Compliance Code: 3 / Compliance - inspection

Facility Data

Applicant (Facility's Name): CertainTeed Roxboro Wallboard Facility

Facility Address:
CertainTeed Roxboro Wallboard Facility
921 Shore Road
Semora, NC 27343

SIC: 3275 / Gypsum Products
NAICS: 32742 / Gypsum Product Manufacturing

Facility Classification: Before: Title V **After:** Title V
Fee Classification: Before: Title V **After:** Title V

Permit Applicability (this application only)

SIP: 2D .0503, .0515, .0516, .0521 and .1100, and 2Q .0711
NSPS: Subparts OOO, UUU, and IIII
NESHAP:
PSD:
PSD Avoidance: PM10 and PM2.5
NC Toxics:
112(r):
Other:

Contact Data

Facility Contact	Authorized Contact	Technical Contact
Michael Rodgers Facilities Engineer (336) 257-0306 921 Shore Road Semora, NC 27343	Patrick Cavanagh Plant Manager (336) 322-6314 921 Shore Road Semora, NC 27343	D. Gresham Southeast Region EHS Manager (919) 691-2073 200 Certainteed Road Oxford, NC 27565

Application Data

Application Number: 7300082.13A
Date Received: 03/26/2013
Application Type: Modification
Application Schedule: TV-1st Time

Existing Permit Data
Existing Permit Number: 10024/R02
Existing Permit Issue Date: 02/05/2015
Existing Permit Expiration Date: 01/31/2023

Total Actual emissions in TONS/YEAR:

CY	SO2	NOX	VOC	CO	PM10	Total HAP	Largest HAP
2014	0.3900	97.48	3.39	51.74	46.26	Not Available	Not Available
2013	0.3400	91.45	3.14	48.28	14.44	1.08	1.04 [Hexane, n-]
2012	0.1900	27.79	14.79	65.85	13.82	0.0004	0.0001 [Mercury & Compounds - all total]

Review Engineer: Rahul Thaker

Review Engineer's Signature: **Date:** January 14, 2015

Comments / Recommendations:
Issue 10024T03
Permit Issue Date: xx
Permit Expiration Date: xx

1. Purpose of Application

CertainTeed Roxboro Wallboard Facility (CertainTeed), Semora, Person County, North Carolina, has submitted an application to obtain an initial title V permit, in accordance with 15A NCAC 2Q .0504(d).

This application review provides a statement of basis for issuing the initial Title V permit, pursuant to 15A NCAC 2Q .0500 and Part 70 of 40 CFR.

2. Facility Description

CertainTeed is a wallboard manufacturing facility. The facility utilizes desulfurized gypsum (DSG) produced at the neighboring Duke Energy Progress's Roxboro Steam Station and at the nearby Duke Energy Progress's Mayo Steam Station. The gypsum is conveyed from the wet scrubbers of Roxboro Plant to CertainTeed facility as a wet material via conveyors. The arriving gypsum may directly enter the process.

The facility includes a number of different types of equipment (conveyors, silos, bins, screens, mixers, kettles, dryers, emergency generators, and heaters) to process wet gypsum and make wallboards.

3. Application Chronology

03/26/2013 DAQ received the initial Title application.
02/05/2015 DAQ renewed the air permit 10024R01 in accordance with 2Q .0300 "Construction and Operation Permits".

4. Statement of Compliance

Steven Carr of Raleigh Regional Office inspected the facility on February 11, 2015 and he concluded, "at the time of inspection, this facility appeared to be in compliance with all permit requirements".

Additionally, the applicant has certified through submittal of the E5 Form that the facility is in compliance with all applicable requirements.

5. Permit Modification/Changes

As stated in Section 1 above, this application is a request to obtain an initial Title V permit for the facility. No new / modified equipment has been requested, nor, any operational changes have been requested for any existing equipment.

This application review, thus, will include the basis for issuance of an initial Title V permit, containing all applicable requirements pursuant to 15A NCAC 2Q .0500 and Part 70 of 40 CFR.

5.1 Gypsum Handling

The synthetic gypsum is received as desulfurization gypsum (DSG) from either the Roxboro Steam Station or the Mayo Steam Station.

The gypsum handling emission sources are Wet DSG Conveying System Transfer Point #1 (ES-01-A), Wet DSG Conveying System Transfer Point #2 (ES-01-B), and Wet DSG Silo (ES-01-C). The associated control devices are dust collectors (ID Nos. DC-44, DC-45, and BV-01C).

The conveyors convey DSG to the Wet DSG Silo. The silo stores the DSG prior to feeding to the Cage Mill Dryer. Emissions associated with these sources include particulate emissions associated with conveyor operations and storage operations. The following represents the emissions summary for these sources:

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-01-A	500	N/A	0.174	0.764	0.174	0.764	0.174	0.764

ES-01-B	500	N/A	0.174	0.764	0.174	0.764	0.174	0.764
ES-01-C	500	69.0	0.032	0.142	0.032	0.142	0.032	0.142

The emissions estimates for each of these sources is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collectors. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption.

Regulatory Applicability

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission source (ES-01-C) is the only source subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0 * (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10 * (P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for the source is less than the allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

The Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter.

With respect to reporting, the Permittee will be required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ. Finally, the Permittee will be required to submit semi-annually summary report of monitoring and recordkeeping activities.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from sources (ES-01-A and ES-01-B) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from the source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The Permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission sources (ES-01-A, ES-01-B, and ES-01-C) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-01-A, ES-01-B, and ES-01-C) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-01-A, ES-01-B, and ES-01-C) are subject to this requirement. Please refer to Section 6.3 below.

5.2 Gypsum Drying

The gypsum drying system consists of a single system for drying synthetic gypsum. The gypsum is fed from the hopper by a screw-type feeder into a dryer-deagglomerator (cage mill). The material to be dried is fed through the top of the cage mill inlet, falling into the chamber along with heated gas at a rate that is determined by pressure and temperature sensors located in the system and adjusted automatically.

In the chamber, controlled action by the cage mill deagglomerates the feed, and simultaneously, the hot gas removes free moisture. The material is suspended in the air stream and passes first through a cyclone and then a dust collector (baghouse), where the air is separated from the dried gypsum (now referred to as landplaster). The system is kept under negative pressure to prevent dusting at the cyclone and dust collector. Landplaster is conveyed from the cyclone and dust collector by a screw conveyor to the dry DSG intermediate silo. Landplaster is then conveyed to the conical kettles.

The gypsum drying emission sources are Cage Mill DSG Dryer (ES-02) and Dry DSG Conveying System #1 (ES-03).

Cage Mill DSG Dryer (ES-02) and associated Baghouse (DC-02)

Emissions associated with this source include particulate emissions associated with process operations and criteria pollutant emissions associated with natural gas combustion. Process particulates are routed through a dust collector to recycle raw material back into the process prior to exhaust being directed to the atmosphere.

Dry DSG Conveying System #1 (ES-03) and associated Baghouse (BV-03)

Emissions associated with this source include particulate emissions associated with conveyor operation. Particulates are routed through a dedicated bin vent filter to recycle raw material back into the process.

The following represents the emissions summary (PM only) for these sources:

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-02	121	N/A	3.00	13.2	3.00	13.2	3.00	13.2
ES-03	109	N/A	0.016	0.071	0.016	0.071	0.016	0.071

The emissions estimate for each of these sources is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption.

In addition, the following provides emissions estimate due to natural gas combustion in the emission source (ES-02) using AP-42 emissions factors (Section 1.4 Natural Gas Combustion, July 1998):

Pollutant	Emission Rate tons/yr
PM	0.19
PM10	0.19
PM2.5	0.19
SO_2	0.02
NOx	2.50
CO	2.10
VOC	0.14
GHG as CO_2e	25628

Regulatory Applicability

15A NCAC 2D .0516 Sulfur Dioxide Emissions from Combustion Sources

Emission source (ES-02) is subject to this requirement.

Emission of sulfur dioxide from any source of combustion that is discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of sulfur dioxide per million BTU input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Sulfur dioxide formed or reduced as a result of treating flue gases with sulfur trioxide or other materials shall also be accounted for when determining compliance with this standard.

A source subject to an emission standard for sulfur dioxide in Rules .0524, .0527, .1110, .1111, .1205, .1206, .1210, or .1211 of 15A NCAC shall meet the standard in that particular rule instead of 2.3 lb/million Btu emission standard under 2D .0516.

Natural gas has very negligible sulfur content. As per AP-42 (Section 1.4 Natural Gas Combustion, July 1998), based upon sulfur content of 2000 grains/million cubic feet (pipeline quality gas), the SO_2 emissions are estimated to be 0.0006 lb/million Btu. Hence, compliance with the SO_2 standard of 2D .0516 is expected. Because, the potential emission rate is significantly lower than the emission standard, no monitoring / record keeping / reporting will be required for SO_2 emissions from the cage mill dryer when burning natural gas or propane.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from source (ES-03) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from the source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission sources (ES-02 and ES-03) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-02 and ES-03) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-02 and ES-03) are subject to this requirement. Please refer to Section 6.3 below.

5.3 Reclaim and Reclaim Gypsum Drying

The reclaim system consists of a heavy-duty shredder system with a high rotational speed toothed cylinder and hydraulic ram. Reclaim material entering the top of the machine is shredded and transferred to a storage hopper via a sealed drag chain conveyor. This pre-crushed material is then fed to a heated impact mill system where it is simultaneously pulverized and dried.

The material is fed into the impact mill inlet falling into the grinding chamber along with heated gas at a rate that is determined by pressure and temperature sensors located in the system and adjusted automatically. In the grinding chamber, controlled action by the mill grinds the reclaim material to the desired product size. The heated gas removes the free moisture and the product passes with the exhaust gases to a dust collector (baghouse) where the product is removed from the gas stream. The product is transferred to a storage silo within the plastermill via pneumatic conveying. The processed reclaim material is then metered into the landplaster system conveying system.

The associated emissions sources are Take-Off/Dunnage Saws (ES-41) and Impact Mill Scrap Processing System (ES-42).

Take-Off/Dunnage Saws (ES-41) and associated Baghouse (DC-41)

Emissions associated with this source include particulate emissions associated with end sawing operations. Process particulates are routed through a dust collector to recycle material back into the process.

Impact Mill Scrap Processing System (ES-42) and associated Baghouse (DC-42)

Emissions associated with this source include particulate emissions associated with process operations and criteria emissions associated with natural gas combustion. Process particulates are routed through a dust collector to recycle raw material back into the process prior to being emitted to the atmosphere.

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-41	45	43.6	2.18	9.55	2.18	9.55	2.18	9.55
ES-42	20	N/A	0.49	2.14	0.49	2.14	0.49	2.14

Combustion Emissions Summary for ES-42

Pollutant	Emission Rate tons/yr
PM	0.23

PM10	0.23
PM2.5	0.23
SO2	0.02
NOx	3.01
CO	2.52
VOC	0.17
GHG as CO_2e	3587

The emissions estimate for each of these sources is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption. The combustion emissions estimate for ES-42 is based upon AP-42 emissions factors (Section 1.4 "Natural Gas Combustion", 7/98).

Regulatory Applicability

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission source (ES-41) is subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0* (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10*(P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for the source is less than the allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

The Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter.

With respect to reporting, the Permittee will be required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ. Finally, the Permittee will be required to submit semi-annually summary report of monitoring and recordkeeping activities.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from source (ES-41) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from the source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. The Permittee shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission source (ES-42) is subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-41 and ES-42) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-41 and ES-42) are subject to this requirement. Please refer to Section 6.3 below.

5.4 HRA Landplaster Conveying System

The heat resistant accelerator (HRA) landplaster pneumatic conveying system transfers landplaster to the HRA system day bin.

The associated sources are Dry DSG Intermediate Silo (ES-06) and Dry DSG Conveying System #4 (ES-07).

Dry DSG Intermediate Silo (ES-06) and associated Baghouse (BV-06)

Emissions associated with this source include particulate emissions associated with storage operations. Particulates are routed through a bin vent filter to recycle raw material back into the silo.

Dry DSG Conveying System #4 (ES-07) and associated Baghouse (BV-07)

Emissions associated with this source include particulate emissions associated with conveyor operations. Particulates are routed through a dedicated bin vent filter to recycle raw material back into the process.

Emissions Summary

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-06	109	N/A	0.174	0.764	0.174	0.764	0.174	0.764
ES-07	109	N/A	0.049	0.214	0.049	0.214	0.049	0.214

The emissions estimate for each of these sources is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption.

Regulatory Applicability

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from sources (ES-06 and ES-07) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions from each source once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from any source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission sources (ES-06 and ES-07) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-06 and ES-07) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-06 and ES-07) are subject to this requirement. Please refer to Section 6.3 below.

5.5 Kettle Calcining Process

This process produces Plaster of Paris ($CaSO_4$–½H_2O), also called stucco, in a kettle unit. The finely ground gypsum is uniformly fed to two conical kettles by a special screw type feeder. Burners installed above the kettles deliver hot gasses into the unit to calcine the raw gypsum. The heat is transferred to the gypsum through the hot gasses by convection. The gasses then leave the kettles along with the steam from calcination at a temperature of approximately 325°F.

Gypsum is fed uniformly to the kettles. As the more dense raw gypsum particles sink in the material mass, they displace the lighter calcined material, which overflows into a hot material receiver. The material is discharged from the hot material receiver by air slide conveyors and then is transported through a screen to the stucco cooler.

Dust collectors following the kettles separate the steam and combustion gasses produced by calcination and transports the separated stucco back to the process. The steam and combustion gasses are discharged into the surrounding environment.

The associated sources are K10 Conical Kettle (ES-09), K20 Conical Kettle (ES-10), Conical Kettle Bad Batch System (ES-11), and Stucco Screen (ES-12).

K10 Conical Kettle (ES-09) and associated Baghouse (DC-09)
K20 Conical Kettle (ES-10) and associated Baghouse (DC-10)

Emissions associated with these sources include particulate emissions from process operations and criteria pollutant emissions from natural gas combustion. Process particulates for each are routed through a dedicated dust collector to recycle raw material back into the process prior to being emitted to the atmosphere.

Conical Kettle Bad Batch System (ES-11) and associated Baghouse (BV-06)

Emissions associated with this source include particulate emissions associated with reclaim operations. Particulates are routed through a dust collector to process bad batch material back into the process.

Stucco Screen (ES-12) and associated Baghouse (BV-14)

Emissions associated with this source include particulate emissions associated with screening operations. Particulates are routed through a bin vent filter to recycle raw material back into the process.

Emissions Summary

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-09	50	N/A	1.23	5.39	1.23	5.39	1.23	5.39
ES-10	50	N/A	1.23	5.39	1.23	5.39	1.23	5.39
ES-11	20	30.5	0.36	1.58	0.36	1.58	0.36	1.58
ES-12	84	N/A	0.11	0.48	0.11	0.48	0.11	0.48

Combustion Emissions Summary for ES-09 and ES-10 (Estimate for Each)

Pollutant	Emission Rate tons/yr
PM	0.99
PM10	0.99
PM2.5	0.99
SO_2	0.08
NOx	23.1
CO	38.6
VOC	0.80
GHG as CO_2e	17322

The emissions estimate for each of these sources is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption.

The combustion emission estimate for ES-09 and ES-10 is based upon AP-42 emissions factors for PM, SO_2, and VOC (Section 1.4 "Natural Gas Combustion", 7/98). Manufacturer data have been used to estimate emissions of NOx and CO for this source.

Regulatory Applicability

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from sources (ES-11 and ES-12) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions from each source once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from any source is observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission sources (ES-09 and ES-10) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-09 through ES-12) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-09 and ES-10) are subject to this requirement. Please refer to Section 6.3 below.

5.6 Stucco Cooler

The stucco cooler is a combination heat exchanger type cooler and air preheater where the hot calcined gypsum (stucco) is tumbled in a rotary drum containing an array of ducts. Cool ambient air is drawn through these ducts at a rate required to cool the stucco to a desired storage temperature. Indirect heat exchange takes place via conduction through these ducts. Material flow is accomplished by means of cooler tilt angle and feed rate. Since the ambient cooling air does not come in contact with the stucco, no dust separation is needed at the fan discharge. The heated air is then used as the supply air for the cage mill and kettles.

The associated emission source is Stucco Cooler Conveying System (ES-14).

Stucco Cooler Conveying System (ES-14) and associated Baghouse (BV-14)

Emissions associated with this source include particulate emissions associated with conveyor operations. Particulates are routed through a bin vent filter to recycle material back into the process.

Emissions Summary

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-14	84	N/A	0.26	1.15	0.26	1.15	0.26	1.15

The emissions estimate is based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a very conservative assumption.

Regulatory Applicability

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from source (ES-14) is subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions from the source once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within

30 days of effective date of this initial Title V permit. If visible emissions from the source is observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emission source (ES-14) is subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission source (ES-14) are subject to this requirement. Please refer to Section 6.3 below.

5.7 Stucco Metering/Feeding System

The stucco metering and feeding system consists of a rotary vane feeder in the stucco silo. The stucco level in the elevator is controlled by a level probe to assure continuous supply of stucco across the screw. The scalping screw carries an excess of stucco across the inlet area of the metering screw assuring an even feed. The excess stucco not used by the metering screw is returned to the elevator. The metering screw discharges to a weigh belt, which weighs the material and provides a consistent material feed to the mixer.

The associated sources are Dry Mineral Day Bin (ES-16), HRA System (ES-19), Stucco Silo (ES-20), and Entoleter (ES-21).

Dry Mineral Day Bin (ES-16) and associated Baghouse (BV-16)
HRA System (ES-19) and associated Baghouse (DC-19)

Emissions associated with these sources include particulate emissions associated with process handling operations. Process particulates for each are routed through a dedicated bin vent to recycle material back into the process prior to being emitted to the atmosphere.

Stucco Silo (ES-20) and associated Baghouse (BV-20)

Emissions associated with this source include particulate emissions associated with storage operations. Particulates are routed through a dedicated bin vent filter to recycle material back into the silo.

Entoleter (ES-21) and associated Baghouse (DC-21)

Emissions associated with this source include particulate emissions associated with process operations. Particulates are routed through a dust collector to recycle material back into the process.

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-16	1.8	6.1	0.03	0.14	0.03	0.14	0.03	0.14
ES-19	1.8	N/A	0.19	0.85	0.19	0.85	0.19	0.85
ES-20	84	49.5	0.07	0.29	0.07	0.29	0.07	0.29

ES-21	97	N/A	0.19	0.85	0.19	0.85	0.19	0.85

The estimated emissions for each of these sources are based upon the maximum exhaust air flow rate (as included in the application) and a typical emission rate of 0.01 grain / dscf, associated with dust collector. It is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a very conservative assumption.

Regulatory Applicability

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission sources (ES-16 and ES-20) are subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0* (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10*(P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for each of these source is less than the respective allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

To comply with this requirement, the Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter.

With respect to reporting, the Permittee will be required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ. Finally, the Permittee will be required to submit semi-annually summary report of monitoring and recordkeeping activities.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from sources (ES-19 and ES-21) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from any source is observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis That is, submit a report by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emissions source (ES-16, ES-19, ES-20 and ES-21) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emissions sources (ES-16, ES-19, ES-20, and ES-21) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-16, ES-19, ES-20, and ES-21) are subject to this requirement. Please refer to Section 6.3 below.

5.8 Wet Board Forming and Handling

The board forming and handling system consists of equipment for paper handling, guiding and forming; wet additive preparation and feeding; dry additive preparation and feeding; board core mixing and forming; the forming conveyor belt line and roller section; and the board cutting, inverting, and transferring equipment preparatory to feeding the wet board into the drying equipment.

In the mixer, stucco and water, along with the other additives (potash, dextrose, boric acid, HRA, and fiberglass) are blended into slurry and deposited on moving paper. A second paper sheet is continuously fed on top of the slurry, and together the sandwich of two sheets of paper with a gypsum slurry core passes through extrusion plates, where the gypsum board is formed into the proper dimensions.

The forming line is the conveying system where the gypsum in the newly formed board core re-crystallizes and hardens. This forming takes place on a long, flat belt with closely spaced rollers producing a smooth finished board surface.

A rotary knife is used to accurately cut the wet board stream into individual boards of an accurate length. After cutting, the boards are inverted prior to drying.

The associated emission sources are Wet Mixer (ES-23), Stucco Recirculation (ES-24), Bulk Starch Silo (ES-25), Bulk Vermiculite Silo (ES-27), Starch Day Bin (ES-28), Vermiculite Day Bin (ES-30), Potash Day Bin (ES-33), Boric Acid Day Bin (ES-36), and HRA Day Bin (ES-38).

Wet Mixer (ES-23) and associated Baghouse (BV-23)

Emissions associated with this source include particulate emissions associated with mixing operations. Particulates are routed through a bin vent filter to recycle material back into the process.

Stucco Recirculation (ES-24) and associated Baghouse (DC-24)

Emissions associated with this source include particulate emissions associated with process operations. Particulates are routed through a bin vent filter to recycle material back into the process.

Bulk Starch Silo (ES-25) and associated Baghouse (BV-25)
Bulk Vermiculite Silo (ES-27) and associated Baghouse (BV-27)
Starch Day Bin (ES-28) and associated Baghouse (BV-28)
Vermiculite Day Bin (ES-30) and associated Baghouse (BV-30)
Potash Day Bin (ES-33) and associated Baghouse (DC-19)
Boric Acid Day Bin (ES-36) and associated Baghouse (DC-19)
HRA Day Bin (ES-38) and associated Baghouse (DC-19)

Emissions associated with these sources include particulate emissions associated with process handling operations. Process particulates for each are routed through a dedicated bin vent filter to recycle raw material back into the process prior to being emitted to the atmosphere.

Emissions Summary

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-23	77	48.7	0.12	0.54	0.12	0.54	0.12	0.54
ES-24	77	N/A	0.18	0.80	0.18	0.80	0.18	0.80
ES-25	1.4	5.14	0.07	0.32	0.07	0.32	0.07	0.32
ES-27	3.1	8.8	0.07	0.32	0.07	0.32	0.07	0.32
ES-28	0.5	2.7	0.05	0.23	0.05	0.23	0.05	0.23
ES-30	3.3	9.2	0.05	0.23	0.05	0.23	0.05	0.23
ES-33	0.4	2.1	0.065	0.29	0.065	0.29	0.065	0.29
ES-36	0.09	0.8	0.065	0.29	0.065	0.29	0.065	0.29
ES-38	0.5	2.7	0.065	0.29	0.065	0.29	0.065	0.29

The emissions estimate for PM for each of these sources is based upon the respective maximum exhaust flow rate (as included in the application) and performance guarantee of 0.01 grain/dscf for each baghouse. It is assumed that the emissions of PM10 and PM2.5 equal to emissions of PM, which is a very conservative assumption.

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission sources (ES-23, ES-25, ES-27, ES-28, ES-30, ES-33, ES-36, and ES-38) are subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0 * (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10 * (P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for each of these source is less than the respective allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

To comply with this requirement, the Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter.

With respect to reporting, the Permittee will be required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ. Finally, the Permittee will be required to submit semi-annually summary report of monitoring and recordkeeping activities.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from sources (ES-23, ES-24, ES-25, ES-28, ES-33, ES-36, and ES-38) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish “normal” within 30 days of

effective date of this initial Title V permit. If visible emissions from any source is observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis That is, submit a report by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emissions sources (ES-24, ES-27, and ES-30) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emissions sources (ES-23, ES-24, ES-25, ES-27, ES-28, ES-30, ES-33, ES-36, and ES-38) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-23 and ES-24) are subject to this requirement. Please refer to Section 6.3 below.

5.9 Wallboard Dryer

The purpose of the wallboard dryer is to remove excess water from the board; this is the water that is necessary in the mix, beyond that for re-crystallization, to provide fluid slurry for forming the continuous sheet.

The wallboard dryer has three distinct zones. The first two zones remove the bulk of the water. The third zone is longer and cooler than the first two zones and is carefully controlled to dry the board to the proper moisture level without calcining the reformed gypsum crystals.

The associated sources are Wallboard Dryer (ES-40) and Dryer End Seal Exhaust (ES-39).

Wallboard Dryer Exhaust (ES-40)

Emissions associated with this source include volatile organic compound (VOC), hazardous air pollutant (HAP), and toxic air pollutant (TAP) emissions associated with process operations and criteria emissions associated with natural gas combustion. Emissions from this source are uncontrolled.

Dryer End Seal Exhaust (ES-39)

Emissions associated with this source include particulate emissions associated with end sealing operations. Process particulates are uncontrolled.

Emissions Summary

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-39	45	43.6	Negligible	Negligible	Negligible	Negligible	Negligible	Negligible
ES-40	45	43.6	1.12	4.89	1.12	4.89	1.12	4.89

Combustion Emissions Summary for ES-40

Pollutant	Emission Rate tons/yr
PM	4.6
PM10	4.6
PM2.5	4.6
SO_2	0.37
NOx	30.4
CO	128.9
VOC	3.63
GHG as CO_2e	78716

The process PM emission rate of wallboard dryer (ES-40) is based upon the dust loading of 0.002 grain/dscf and a maximum exhaust flow rate of 64,217 dscf/m.

The combustion emission estimate for ES-02 is based upon AP-42 emissions factors for PM, SO_2, and VOC (Section 1.4 "Natural Gas Combustion", 7/98). Manufacturer data have been used to estimate emissions of NOx and CO for this source.

In addition, it is assumed that emissions of PM10 and PM2.5 equal to emissions of PM, which is a conservative assumption.

Regulatory Applicability

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission sources (ES-39 and ES-40) are subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0 * (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10 * (P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for each of these source is less than the respective allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

To comply with this requirement, the Permittee will be required to maintain production records such that the process rates "P" in tons per hour, as specified by the formulas contained above (or the formulas contained in 15A NCAC 2D .0515) can be derived, and shall make these records available to a DAQ authorized representative upon request.

No reporting shall be required.

15A NCAC 2D .0516 Sulfur Dioxide Emissions from Combustion Sources

Emission source (ES-40) is subject to this requirement.

Emission of sulfur dioxide from any source of combustion that is discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of sulfur dioxide per million BTU input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Sulfur dioxide formed or reduced as a result of treating flue gases with sulfur trioxide or other materials shall also be accounted for when determining compliance with this standard.

A source subject to an emission standard for sulfur dioxide in Rules .0524, .0527, .1110, .1111, .1205, .1206, .1210, or .1211 of 15A NCAC shall meet the standard in that particular rule instead of 2.3 lb/million Btu emission standard under 2D .0516.

Natural gas has very negligible sulfur content. As per AP-42 (Section 1.4 Natural Gas Combustion, July 1998), based upon sulfur content of 2000 grains/million cubic feet (pipeline quality gas) , SO_2 emissions are estimated to be 0.0006 lb/million Btu. Hence, compliance with the SO_2 standard in 2D .0516 is expected. Because, the potential emission rate is significantly lower than the emission standard, no monitoring / record keeping / reporting will be required for SO_2 emissions from the cage mill dryer when burning natural gas or propane.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from source (ES-39 and ES-40) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from any source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis That is, submit a report by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2Q .0317 Avoidance Condition for PSD

Emission sources (ES-39 and ES-40) are subject to this requirement. Please refer to Section 6.2 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-39 and ES-40) are subject to this requirement. Please refer to Section 6.3 below.

5.10 Scrap silo (ES-43) and dust collector (DC-43)

Emissions associated with this source include particulate matter emissions associated with the scrap silo staging device within the scraping processing materials operations. Process particulates are routed through a dedicated dust collector to recycle raw material back into the process prior to being emitted into the atmosphere.

ICBM starch silo bin (ES-47) and duct collector (BV-47)

Emissions associated with this source include particulate matter emissions associated with storage operations. Particulates are routed through a dedicated bin vent filter to recycle raw material back into the silo.

ICBM starch day bin (ES-49) and dust collector (BV-49)

Emissions associated with this source include particulate matter missions associated with storage operations to hold material immediately before it is put into the process. Particulates are routed through a dedicated bin vent filter to recycle raw material back into the day bin.

The emissions summary for each of the above sources is included below:

Emission Source	Process Rate	Allowable PM Emission Rate	PM		PM10		PM2.5	
	tons/hr	lbs/hr	lbs/hr	tons/yr	lbs/hr	tons/yr	lbs/hr	tons/yr
ES-43	5	12.05	0.074	0.32	0.07	0.32	0.07	0.32
ES-47	22.5	33.0	0.074	0.32	0.074	0.32	0.074	0.32
ES-49	3.5	9.49	0.053	0.23	0.053	0.23	0.053	0.23

The emissions estimate for PM for each of these sources is based upon the respective maximum exhaust flow rate (as included in the application) and performance guarantee of 0.01 grain/dscf for each baghouse. It is assumed that the emissions of PM10 and PM2.5 equal to emissions of PM, which is a very conservative assumption.

Regulatory Applicability

15A NCAC 2D .0515 Particulates from Miscellaneous Industrial Processes

Emission sources (ES-43, ES-47, and ES-49) are subject to this requirement.

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0 * (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10 * (P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

As indicated in the Table above, the potential PM emission rate for each of these source is less than the respective allowable emissions rate. Hence, compliance with the requirement in 2D .0515 is expected.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from source (ES-43, ES-47, and ES-49) are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month for each source. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from any source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The Permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

15A NCAC 2D .0524 New Source Performance Standards

Emissions sources (ES-43, ES-47, and ES-49) are subject to this requirement. Please refer to Section 6.1 below.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission source (ES-43) is subject to this requirement. Please refer to Section 6.3 below.

5.11750 kW diesel-fired emergency generator (ES-G1)
175 kW diesel-fired emergency generator (ES-G2)

These are diesel-fired emergency generators. The engine size for ES-EG1 and ES-G2 is 750 kW (1006 HP) and 175 kW (235 HP), respectively.

The following is an emission summary for each of these generators. It is based upon 500 hours of operation and AP-42 emissions factors (Section 3.3 Gasoline and Diesel Industrial Engines, 10/96, and Section 3.4, Large Stationary Diesel and All Stationary Dual-fuel Engines, 10/96).

Pollutant	ES-G1 Potential Emissions TONS/YR	ES-G2 Potential Emissions TONS/YR
PM	0.2	0.13
PM-10	0.2	0.13
PM-2.5	0.2	0.13
NOx	6.29	1.82
VOC	0.16	0.15
CO	1.67	0.39
SO_2	0.99	Negligible
GHG as CO_2e	317.6	67.3
Single Largest HAP	0.00153 (benzene)	0.002 (formaldehyde)
Total HAP	<0.00345	0.006

As can be seen above, the potential to emit for the emergency generator (ES-G2) is less than 5 tons/yr (before control) for each criteria pollutant. In addition, the potential to emit for each individual HAP is less than 1000 lbs/yr (before control). Therefore, consistent with 2Q .0503(8), the generator ES-G2 can be deemed an "insignificant activity" and will be, accordingly, permitted in the initial Title V permit by listing it as an attachment to the cover letter to the permit. The generator ES-G1 will be identified as IES-G1 the list.

Regulatory Applicability

15A NCAC 2D .0521 Control of Visible Emissions

Opacity limit of 20% applies to any NSPS-subject generator which may not have any applicable opacity limit. The internal combustion engine of each of these emergency generators is a constant-speed engine. Hence, they are not subject to an opacity limit under NSPS Subpart IIII. Consequently, these generators are subject to 20 percent opacity limit in accordance with 2D .0521. Compliance with the requirement is expected due to burning of clean fuel, low sulfur diesel fuel (15 ppm sulfur), in these sources.

No monitoring/recordkeeping/reporting is required for visible emissions from burning of diesel fuel.

15A NCAC 2D .0524 New Source Performance Standards [NSPS Subpart IIII]

The following emissions standards apply to these engines (generators) depending upon the size of the engine, displacement of the engine, and model year, in accordance with §60.4205.

Emissions Standards

If the emergency RICE (model year 2007 and later) has a maximum engine power of ≥ 50 HP and a displacement of < 10 liters/cylinder, then, the Permittee must comply with the certification emission standards in 40 CFR 89.112 and .113 for applicable model year beginning in 2007. [§60.4205(b) and §89.112(a)]

The Permittee must operate and maintain stationary CI ICE that achieve the above emission standards as required in §60.4205 according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer, over the entire life of the engine.

Fuel Requirements

Beginning October 1, 2010, the diesel fuel burned in engines with a displacement of < 30 liters per cylinder shall meet the following requirements for non-road diesel fuel in accordance with 60.4207(b) and §80.510(b).

Sulfur content: Maximum 15 ppm

Cetane index: Minimum 40
or
Aromatic content: Maximum 35 volume percent

Monitoring

The Permittee must install a non-resettable hour meter prior to start-up of engine, if the emergency CI ICE does not meet the emissions standards for non-emergency engine.

Compliance Requirements

The Permittee must do the following, except as permitted under 40 CFR 60.4211(g):

- operate and maintain the stationary CI ICE and control device according to the manufacturer's written emission-related instructions or procedures developed by the Permittee that are approved by the engine manufacturer.

- Change those emission-related settings that are permitted by the manufacturer.

- Meet the requirements of 40 CFR parts 89, 94 and/or 1068, as applicable.

For 2007 model year and later stationary CI internal combustion engine requiring to comply with the emission standards specified in §60.4205(b), the Permittee must comply by purchasing an engine certified to the emission standards in §60.4205(b), for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's emission-related specifications except as permitted under 40 CFR 60.4211(g).

If the Permittee does not install, configure, operate, and maintain the engine and control device according to the manufacturer’s emission-related written instructions, or if the Permittee changes emission-related settings in a way that is not permitted by the manufacturer, the Permittee must demonstrate compliance per the requirements of 40 CFR 60.4211(g).

Emergency use stationary ICE can only be operated in accordance with §60.4211(f), as discussed below:

Emergency stationary ICE may be operated for unlimited time in emergency situations.

Emergency stationary ICE can also be used for a maximum 100 hours per calendar year in the following situations: (i) maintenance checks and readiness testing, (ii) emergency demand response, (iii) voltage or frequency deviation of 5 percent or greater below standard voltage or frequency.

Emergency stationary ICE can also be operated for up to 50 hours per calendar year in non-emergency situations, but those 50 hours will be counted as a part of the 100 hours per year for maintenance checks and readiness testing and emergency demand response. Except as provided in the rule, the 50 hours per calendar year for nonemergency situations cannot be used for peak shaving or non-emergency demand response, or to generate income for a facility to an electric grid or otherwise supply power as part of a financial arrangement with another entity.

Notifications, Reports and Records

The Permittee shall comply with all applicable requirements in accordance with §60.4214, as discussed below:

Initial notification is not required for these emergency engines.

Starting with the model years in Table 5 to this Subpart, if the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, the Permittee must keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. The Permittee must record the time of operation of the engine and the reason the engine was in operation during that time.

If the Permittee operates either the EG1 or EG2 emergency generator engine for more than 15 hours per calendar year for the purposes specified in §60.4211(f)(2)(ii) [emergency demand response] and (iii) [voltage or frequency deviation of 5 percent or greater below standard voltage or frequency], or that operates for the purposes specified in §60.4211(f)(3)(i) [supply power as a part of the financial arrangement], the Permittee must submit an annual report according to the requirements in paragraphs (d)(1) through (3) of§60.4214.

15A NCAC 2D. 1111 Maximum Achievable Control Technology [MACT Subpart ZZZZ]

The facility is an "area source" for HAPs emissions. As per §63.6590(c)(1), a "new" "stationary RICE located at an "area source" do not have any requirements under Part 63 including Subpart ZZZZ, but, it must meet all applicable requirements in NSPS Subpart IIII for compression ignition engines.

As discussed in the above section, the engines for these emergency generators are subject to the requirements in NSPS Subpart IIII. Thus, they need to comply with the requirements in this NSPS in order to comply with the ZZZZ MACT. No further requirements shall apply in Part 63.

5.12 Process water heater (ES-46)
Paper heaters (ES-50)

These are natural gas-fired heaters. The heat input rates are 3.6 million Btu/hr (process water heater) and 0.45 million Btu/hr (aggregate heat input rate for all paper heaters).

The following is an emissions summary for each of these sources. This emission estimate is based upon 8,760 hours of operation per year and AP-42 emissions factors (Section 1.4 Natural Gas Combustion, 7/98).

Pollutant	Process Water Heater Potential Emissions TONS/YR Natural Gas	Paper Heaters Potential Emissions TONS/YR Natural Gas

PM	0.12	0.01
PM-10	0.12	0.01
PM-2.5	0.12	0.01
NOx	1.55	0.19
VOC	0.09	0.01
CO	1.30	0.16
SO_2	0.01	Negligible
GHG as CO_2e	1844	231
Single Largest HAP	0.0278 (Hexane)	0.00348 (Hexane)
Total HAP	0.0291	0.00364

As can be seen above, the potential to emit for each of these sources is less than 5 tons/yr (before control) for each criteria pollutant. In addition, the potential to emit for each individual HAP is less than 1000 lbs/yr (before control). Therefore, consistent with 2Q .0503(8), each of these sources (ES-46 and ES-50) can be deemed an "insignificant activity" and will be, accordingly permitted by listing it as an attachment to the cover letter to the Title V permit. They will be identified as IES-46 and IES-50 in the list.

Regulatory Applicability

15A NCAC 2D .0503 Particulates from Fuel Burning Indirect Heat Exchangers

This regulation applies to particulate matter (PM) emissions from indirect heat exchangers, except the PM emissions from electric steam generating units are subject to 2D .0536.

Emissions of PM from combustion of natural gas that are discharged from the heaters into the atmosphere, shall not exceed PM emission rate as derived using 2D .0503(c).

Accordingly, allowable emissions of particulate matter (PM) from burning natural gas shall be calculated as follows.

$E = 1.090 \times Q^{-0.2594}$ Where: E = allowable PM emission rate in lbs/million Btu heat input
Q = maximum heat input rate in million Btu per hour at the plant site

The maximum heat input rate at the plant site including the heat inputs from these heaters (ES-46 and ES-50) is 4.05 million Btu/hr (3.6 million Btu/hr + 0.45 million Btu/hr).

Therefore, E = 0.758 million Btu/hr each.

This allowable emission rate of 0.758 lb/million Btu for PM, for example, for process water heater, can also be written as 2.73 lb/hr (0.758 lb PM/million Btu x 3.6 million Btu/hr).

Natural gas is a relatively clean fuel as shown by the AP-42 emission factor for PM of 0.007 lb/million Btu.

Thus, compliance is expected for each of these heaters.

15A NCAC 2D .0516 Sulfur Dioxide Emissions from Combustion Sources

Emission sources (ES-46 and ES-50) are subject to this requirement.

Emission of sulfur dioxide from any source of combustion that is discharged from any vent, stack, or chimney shall not exceed 2.3 pounds of sulfur dioxide per million BTU input. Sulfur dioxide formed by the combustion of sulfur in fuels, wastes, ores, and other substances shall be included when determining compliance with this standard.

Sulfur dioxide formed or reduced as a result of treating flue gases with sulfur trioxide or other materials shall also be accounted for when determining compliance with this standard.

A source subject to an emission standard for sulfur dioxide in Rules .0524, .0527, .1110, .1111, .1205, .1206, .1210, or .1211 of 15A NCAC shall meet the standard in that particular rule instead of 2.3 lb/million Btu emission standard under 2D .0516.

Natural gas has very negligible sulfur content. As per AP-42 (Section 1.4 Natural Gas Combustion, July 1998), based upon sulfur content of 2000 grains/million cubic feet (pipeline quality gas) , the SO_2 emissions are estimated to be 0.0006 lb/million Btu. Hence, compliance with the SO_2 standard of 2D .0516 is expected.

15A NCAC 2D .0521 Control of Visible Emissions

Visible emissions from these sources (ES-46 and ES-50) are subject to an opacity limit of 20%. Due to burning of cleaner fuel (natural gas), visible emissions from the sources are expected to be negligible. Therefore, compliance with this requirement is expected.

15A NCAC 2D .1100 Control of Toxic Air Pollutants
15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Emission sources (ES-46 and ES-50) are subject to this requirement. Please refer to Section 6.3 below.

6. Multiple Sources Regulatory Requirements

6.1 Wet DSG Conveying System Transfer Point #1 (ES-01-A)
Wet DSG Conveying System Transfer Point #2 (ES-01-B)
Wet DSG Silo (ES-01-C)
Dry DSG Conveying System #1 (ES-03)
Dry DSG Intermediate Silo (ES-06)
Dry DSG Conveying System #4 (ES-07)
Conical Kettle Bad Batch System (ES-11)
Stucco Screen (ES-12)
Stucco Cooler Conveying System (ES-14)
Dry Mineral Day Bin (ES-16)
HRA System (ES-19)
Stucco Silo (ES-20)
Entoleter (ES-21)
Stucco Recirculation (ES-24)
Bulk Vermiculite Silo (ES-27)
Vermiculite Day Bin (ES-30)
Scrap Silo (ES-43)

NSPS Subpart OOO

EPA has promulgated NSPS Subpart OOO "Standards of Performance for Nonmetallic Mineral Processing Plants". This NSPS was lastly revised on April 28, 2009 (74 FR 19309).

The provisions of this Subpart apply to the following affected facilities in fixed or portable nonmetallic mineral processing plants: each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage bin, enclosed truck or railcar loading station.

Any affected facility as described above that commences construction, modification, or reconstruction after August 31, 1983, is subject to the requirements of this Subpart. However, the provisions of this Subpart do not apply to plants without crushers or grinding mills above ground.

Nonmetallic mineral means any of the following minerals or any mixture of which the majority is any of the following minerals:

(1) Crushed and Broken Stone, including Limestone, Dolomite, Granite, Traprock, Sandstone, Quartz, Quartzite, Marl, Marble, Slate, Shale, Oil Shale, and Shell.

(2) Sand and Gravel.

(3) Clay including Kaolin, Fireclay, Bentonite, Fuller's Earth, Ball Clay, and Common Clay.

(4) Rock Salt.

(5) Gypsum (natural or synthetic).

(6) Sodium Compounds, including Sodium Carbonate, Sodium Chloride, and Sodium Sulfate.

(7) Pumice.

(8) Gilsonite.

(9) Talc and Pyrophyllite.

(10) Boron, including Borax, Kernite, and Colemanite.

(11) Barite.

(12) Fluorospar.

(13) Feldspar.

(14) Diatomite.

(15) Perlite.

(16) Vermiculite.

(17) Mica.

(18) Kyanite, including Andalusite, Sillimanite, Topaz, and Dumortierite.

Nonmetallic mineral processing plant means any combination of equipment that is used to crush or grind any nonmetallic mineral wherever located, including lime plants, power plants, steel mills, asphalt concrete plants, portland cement plants, or any other facility processing nonmetallic minerals.

The CertainTeed's wallboard manufacturing facility has been designed to process synthetic gypsum and vermicullite, which are nonmetallic minerals as described above. In addition, the facility sources include HRA system (ES-19) and entoleter (ERS-21), which are crushing operations used for size reduction of gypsum.

Thus, all of the sources listed above in the beginning of this Section 6.1 are subject to this Subpart.

§ 60.672 Standards for Particulate Matter

The emissions from the affected sources (ES-01-A, ES-01-B, ES-01-C, ES-03, ES-06, ES-07, ES-11, ES-12, ES-14, ES-16, ES-19, ES-20, ES-21, ES-24, ES-27, ES-30, and ES-43) are controlled by baghouses (ID Nos. DC-44, DC-45, BV-01-C, DC-02, BV-03, BV-06, BV-07, DC-09, DC-10, BV-14, BV-16, DC-19, BV-20, DC-21, DC-24, BV-27,

and BV-30). The emissions from the above sources are deemed stack emissions as they are captured and transported to control devices.

In accordance with Table 2 to the Subpart, for affected sources excluding individual storage bin with a dedicated baghouse, PM emission limit of 0.032 gm/dscm (0.014 grain/dcsf) shall apply. Thus, the concentration-based PM limit applies to affected sources (ES-01A, ES-01B, ES-03, ES-06, ES-07, ES-11, ES-12, ES-14, ES-19, ES-21 and ES-24).

Stack emissions from individual storage bins/silos with dedicated baghouses are not subject to the above PM concentration limit and they are instead comply with the opacity limit of 7 percent opacity. Thus, this opacity limit applies to the sources (ES-01C, ES-16, ES-20, ES27, ES-30 and ES-43). Refer to Table 2 to the Subpart.

§ 60.674 Monitoring of Operations

The Permittee must conduct quarterly 30-minute visible emissions inspections using EPA Method 22 for each source, which uses baghouse to control PM emissions. The Method 22 (40 CFR part 60, Appendix A–7) test shall be conducted while the baghouse is operating. The test is successful if no visible emissions are observed. If any visible emissions are observed, the owner or operator of the affected facility must initiate corrective action within 24 hours to return the baghouse to normal operation.

As an alternative to the periodic Method 22 (40 CFR part 60, Appendix A–7) visible emissions inspections specified above, the owner or operator of any affected facility that uses a baghouse to control emissions may use a bag leak detection system. The owner or operator must install, operate, and maintain the bag leak detection system according to the requirements of this Section 60.674.

The DAQ believes that the both of these monitoring approaches meet the periodic monitoring requirement in §70.6(a)(3)(B) and no further monitoring is required for PM emissions from these sources.

§ 60.675 Test Methods and Procedures

For all above affected facilities, the Permittee is required to conduct performance test to demonstrate compliance with the particulate and opacity standards described above, in accordance with 40 CFR 60.8. Method 5 and Method 9 shall be used to demonstrate compliance concentration-based PM limit and opacity limit, respectively.

For all of these sources, the Permittee has performed initial stack test for emissions of particulate emissions (PM) and visible emissions, as applicable, and submitted results to DAQ. In addition, the Stationary Source Compliance Branch (SSCB) has approved the stack test results through issuance of the April 21, 2014 memorandum and the August 4, 2014 letter, for the sources stated above. These results indicate a high margin of compliance for various sources.

§ 60.676 Reporting and Recordkeeping

The Permittee must record dates and any corrective action taken in a logbook for each periodic inspection required for visible emissions.

If the Permittee chooses to install bag leak detection system, then, it must keep records according to the requirements of this Section.

The Permittee shall submit written reports of the results of all performance tests conducted to demonstrate compliance with the standards set forth in §60.672 of this Subpart, including reports of opacity observations made using Method 9 to demonstrate compliance with §60.672(b), (e) and (f). As stated above, all performance test reports have been reviewed and the results have been approved.

The Permittee must submit notification for an initial start-up for each affected facility within 15 days of such event, as required in § 60.7(a)(3). For a combination of affected facilities in a production line that begin actual initial startup on the same day, the Permittee may submit a single notification of startup. The notification shall be postmarked within 15

days after such date and shall include a description of each affected facility, equipment manufacturer, and serial number of the equipment, if available. Notification for commencement of construction for each affected facility as required in § 60.7(a)(1) is not required in accordance with § 60.676(h).

Reports and notifications required in this Section shall be submitted to NC DAQ and not EPA Region 4.

All initial notifications for each of the NSPS-subject sources have been received by DAQ. Finally, as per Part 70 (implementing regulations in 2Q .0500), the Permittee will be required to submit semi-annual reports summarizing all monitoring activities.

Cage Mill DSG Dryer (ID No. ES-02)
K10 Conical Kettle (ES-09)
K20 Conical Kettle (ES-10)
Impact Mill Scrap processing System (ES-42)

NSPS Subpart UUU

EPA has promulgated NSPS Subpart UUU "Standards of Performance for Calciners and Dryers in Mineral Industries" in 57 FR 44503, September 28, 1992. This NSPS was lastly revised on October 17, 2000 (65 FR 61778). The NSPS applies to each calciner and dryer at a mineral processing plant, if the owner or operator commences construction, modification, or reconstruction after April 23, 1996.

Calciner means the equipment used to remove combined (chemically bound) water and/or gases from mineral material through direct or indirect heating. This definition includes expansion furnaces and multiple hearth furnaces.

Dryer means the equipment used to remove uncombined (free) water from mineral material through direct or indirect heating.

Mineral processing plant means any facility that processes or produces any of the following minerals, their concentrates or any mixture of which the majority (>50 percent) is any of the following minerals or a combination of these minerals: alumina, ball clay, bentonite, diatomite, feldspar, fire clay, fuller's earth, gypsum, industrial sand, kaolin, lightweight aggregate, magnesium compounds, perlite, roofing granules, talc, titanium dioxide, and vermiculite.

CertainTeed's wallboard facility processes flue gas desulfurization byproduct (named DSG in this application), which has the same chemical composition as naturally occurring gypsum. Hence, any calciner or dryer processing gypsum or a substance similar in chemical composition is subject to the requirements of this Subpart. Refer to ADI Control Number 9800041.

The K10 and K20 conical kettles (ES-09 and ES-10) are calciner, processing gypsum, as described in Section 5.5 above. The cage mill DSG dryer (ES-02) is a dryer processing gypsum, as described in Section 5.2 above.

In addition, the Impact Mill Scrap Processing System (ES-42), as described in Section 5.3 above, is a crushing and drying operation. However, DAQ believes that the primary activity of this operation is drying of the waste reclaim board and hence, DAQ had deemed it subject to NSPS Subpart UUU and not Subpart OOO. It should be emphasized here that OK Department of Environmental Quality had also determined that the impact mills at the gypsum wallboard plants are subject to NSPS Subpart UUU and not Subpart OOO[1]. Finally, the above sources have been constructed after the above cut-off date of April 23, 1996 for applicability.

Hence, the emission sources (ES-02, ES-09, ES-10, and ES-42) are subject to the NSPS Subpart UUU.

Finally, the wallboard dryer (ES-40) as described in Section 5.9 above, is a tunnel dryer. Hence, as per §60.730(b), the tunnel dryer located at a mineral processing plant is exempt from the requirements of this NSPS.

[1] Draft permit review for Application No. 93-065(M-5) for Temple-Inland Forest Products Corporation, Fletcher Gypsum Wallboard Plant, Fletcher, Comanche County, Oklahoma, April 25, 2008.

§ 60.732 Standards for Particulate Matter

Affected facilities, K10 and K20 conical kettles (ES-09 and ES-10) are subject to the PM emission standard of 0.092 gm/dscm (0.04 grain/dscf) and 10 percent opacity. Affected facilities, cage mill DSG dryer (ES-02) and impact mill scrap processing system (ES-42) are subject to the PM emission standard of 0.057 gm/dscm (0.025 grain/dscf) and 10 percent opacity.

PM emissions from the above sources are controlled by dedicated baghouses. Each baghouse has a performance guarantee of 0.01 grain/dscf. Hence, compliance with the above PM standards are expected. Moreover, the compliance with these emissions standards have been indicated through a performance test as noted below.

§ 60.736 Test Methods and Procedures

For affected facilities (ES-09, ES-10, ES-02, and ES-42), the Permittee is required to stack test to demonstrate compliance with the particulate and opacity standards described above in accordance with 40 CFR 60.8(b). Method 5 shall be used to demonstrate compliance with particulate matter standard. The sampling time and volume for each test run shall be at least 2 hours and 1.70 dscm, respectively. Method 9 and the procedures in § 60.11 shall be used to demonstrate compliance with the opacity standard.

For all of these sources, as required, the Permittee had performed an initial stack test for emissions of PM and visible emissions, and submitted results to DAQ. The SSCB of DAQ had approved the stack test results through the issuance of April 21, 2014 memorandum and the August 4, 2014 letter, for the sources stated above. These results indicate a high margin of compliance for various sources.

§ 60.734 Monitoring of Emissions and Operations

The owner/operator who uses a dry control device to comply with the particulate matter emission standard shall install, calibrate, maintain, and operate a continuous monitoring system to measure and record the opacity of emissions (COM). However, gypsum rotary dryers and gypsum kettle calciners are exempt from COMs requirements as per paragraph (c) of this Section § 60.734.

Hence, the affected sources, K10 and K20 conical kettles (ES-09 and ES-10), cage mill DSG dryer (ES-02), and impact mill scrap processing system (ES-42), are not subject to the COM requirements.

Since this NSPS does not include any periodic testing or monitoring for these affected sources, the Title V permit must include periodic monitoring to assure compliance with the above emissions standards. The DAQ proposes to include periodic inspection and maintenance for the control device (bagfilter), as below, to satisfy the Part 70 periodic monitoring requirement.

The Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter.

§ 60.735 Recordkeeping and Reporting Requirements

Because §60.734 does not require any monitoring for the sources (ES-09, ES-10, ES-02, and ES-42), the requirements of §60.735 are not applicable with respect to record keeping. However, the following notification requirements do apply to sources (ES-09, ES-10, ES-02, and ES-42).

The Permittee will be required to submit a notification of the date of construction within 30 days of commencement of construction in accordance with §60.7(a)(1).

The Permittee will also be required to submit a notification of the actual date initial startup for within 15 days of such event in accordance with §60.7(a)(3).

All of these notifications have previously been received by DAQ.

Finally, as per Part 70, the Permittee will be required to submit semi-annual reports summarizing all monitoring activities.

6.2 Facility-wide Sources (except ES-43, ES-46, ES-47, ES-49, ES-G1 and ES-G2)

15A NCAC 2Q .0317 [Avoidance of PSD]

The emissions of PM10 and PM2.5 from facility-wide sources, except ES-43, ES-46, ES-47, ES-49, ES-G1 and ES-G2, shall each be less than 250 tons per consecutive 12 month period.

Almost all affected units under this stipulation are equipped with bagfilters, and have been required to perform periodic inspection and maintenance of the bagfilters and/or periodic visible emission monitoring to comply with some other applicable requirements (such as 2D .0515, .0521 and ,0524). In addition, the Permittee is required to keep records in a logbook for all inspections and maintenance performed on bagfilters. Finally, with respect to reporting, the Permittee is required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ.

There are a total of three affected units (ES-39, ES-40, and ES-G1), which are uncontrolled. For sources ES-39 and ES-40, monitoring in the form of recordkeeping for production rates is required for some other applicable requirement such as 2D .0515. For source G1, monitoring in the form of purchase of a certified engine, and operate and maintain the engine as per manufacturer's written instructions, is required to comply with some other requirement under 2D .0524.

The DAQ believes that all of the above requirements (as included to comply with other requirements) are sufficient to meet the periodic monitoring requirement in Part 70. Each of these requirements will help assure that the emissions of PM10 including PM2.5 are controlled to its maximum extent. No additional monitoring, specifically under 2Q .0317 is justified.

6.3 Wet DSG Conveying System Transfer Point #1 (ES-01-A)
Wet DSG Conveying System Transfer Point #2 (ES-01-B)
Wet DSG Silo (ES-01-C)
Cage Mill DSG Dryer (ES-02)
Dry DSG Conveying System #1 (ES-03)
Dry DSG Intermediate Silo (ES-06)
Dry DSG Conveying System #4 (ES-07)
K10 Conical Kettle (ES-09)
K20 Conical Kettle (ES-10)
Stucco Cooler Conveying System (ES-14)
Dry Mineral Day Bin (ES-16)
HRA System (ES-19)
Stucco Silo (ES-20)
Entoleter (ES-21)
Wet Mixer (ES-23)
Stucco Recirculation (ES-24)
Dryer End Seal Exhaust (ES-39)
Wallboard Dryer Exhaust (ES-40)
Take-off/Dunnage Saws (ES-41)
Impact Mill Scrap Processing System (ES-42)

Scrap Silo (ES-43)
Natural Gas Fired Process Water Heater (ES-46)
Natural Gas Fired Paper Heaters (ES-50)

15A NCAC 2D .1100 Control of Toxic Air Pollutants

This is a state-enforceable only requirement. The facility is operating in accordance with the approved air toxics demonstration including the following source-by-source emissions limits for arsenic, benzene, formaldehyde, and non-specific chromium (vi) compounds:

Source ID No.	Arsenic lb/yr	Benzene lb/yr	Formaldehyde lb/hr	Non-specific Chromium VI Compounds lb/yr
ES-01A	0.015242			0.00230
ES-01B	0.015242			0.00230
ES-01C	0.00285			0.000427
ES-02	0.263	0.902	0.00368	0.0394
ES-03	0.00143			0.000214
ES-06	0.0152			0.00230
ES-07	0.00427			0.000641
ES-09	0.108	0.6096	0.00249	0.0161
ES-10	0.108	0.6096	0.00249	0.0161
ES-14	0.0230			0.00343
ES-16	0.00275			0.000413
ES-19	0.0171			0.00256
ES-20	0.00569			0.000854
ES-21	0.0171			0.00256
ES-23	0.0107			0.00160
ES-24	0.0160			0.00241
ES-39 and ES-50 OR ES-40 and ES-50	0.0981 OR 0.0981	2.770 OR 2.770	0.201 OR 0.201	0.0147 OR 0.0147
ES-41	0.191			0.0286
ES-42	0.0426	0.1262	0.000515	0.00639
ES-43	0.00649			0.000972
ES-46		0.0649	0.000265	

It should be noted here that the potential emission rates for each of these sources for the above pollutants are either equal or less than the approved (modeled) emission rates. Hence, no monitoring to assure compliance with these limits is justified.

The above approved emissions limits will be included in the title V permit for all affected sources including for insignificant activities ES-46 and ES-50.

15A NCAC 2Q .0711 Emission Rates Requiring a Permit

Currently, the facility-wide potential emission rates of acetaldehyde, acrolein, benzo(a)pyrene, beryllium, 1,3-butadiene, cadmium, n-hexane, manganese, mercury, nickel, soluble chromate compounds (as chromium VI equivalent), toluene, and xylene, do not exceed the respective TPERs. These pollutants will continue to be included in the title V permit in accordance with 2Q .0711, as below, as state-enforceable only requirement.

Pollutant (CAS Number)	Carcinogens lb/yr	Chronic Toxicants lb/day	Acute Irritants lb/hr
Benzo(a)pyrene (50-32-8)	2.2		
Cadmium (7440-43-9)	0.37		
n-Hexane (110-54-3)		23	
Manganese and Compounds		0.63	
Mercury, Vapor (7439-97-6)		0.013	
Soluble Chromate Compounds, as Chromium (VI) Equivalent		0.013	
Toluene (108-88-3)		98	14.4

The Permittee will need to keep records of operational information demonstrating that emission of these pollutants do not exceed the above toxic pollutant emission limits (TPER). In addition, the Permittee will be required to obtain a permit to comply with the requirements in 2D .1100, prior to actual emissions on a facility-wide basis exceed any of the above TPERs.

7. Attainment Status, PSD, CAM, and 112(r)

PSD

The County of Person is in attainment or unclassifiable/attainment for all promulgated National Ambient Air Quality Standards (NAAQS) in accordance with §81.334. PSD program applies to any major stationary source and any major modification to an existing major stationary source in this County.

The CertainTeed facility is currently a "minor" source for PSD as discussed in Section 6.2 above. This initial Title V application does not include any request for a physical change or a change in method of operation, amounting to "major stationary source". In fact, this application is merely an operating permit application, without any request for any preconstruction approval. Thus, the facility's current "minor" classification does not change.

Compliance Assurance Monitoring (CAM)

The facility has got several emission sources with "active" control devices for particulate emission (PM, PM10 and PM2.5), such as fabric filters. But, the after-control emission rate for each of these pollutants is less than the major source threshold of 100 tons per year for each. Therefore, CAM requirement is not triggered at this time. The Permittee needs to evaluate CAM applicability at the time of renewal of the Title V permit for each of the emissions units on a pre-control basis in the future.

112(r)

The Permittee does not store on-site any regulated compound in quantities exceeding the threshold levels, as per the application.

8. Facility-wide Emissions

The following Table includes facility wide emissions. Actual emissions are taken from the emission inventory, as submitted to DAQ for 2014. Potential emissions estimate is taken from the Title V application, except for PM10 and PM2.5. For PM10, and PM2.5, the potential emissions are based upon the PSD avoidance limit of less than 250 tons per year each.

Pollutant	Actual Emissions Tons/year	Potential Emissions Tons/year
Particulate (TSP)	58.45	58.9

Particulate (PM-10)	58.45	< 250
Particulate (PM-2.5)	58.45	< 250
Carbon Monoxide	51.74	241
Nitrogen Oxides	61.66	103.6
Sulfur Dioxide	0.39	0.72
Volatile Organic Compounds	3.39	74.9
GHG as CO_2e	75252	Not Available
Single largest HAP	1.1 (n-hexane)	< 10
Total HAP	1.16	< 25

9. Public Notice/EPA and Affected State(s) Review

Pursuant to 15A NCAC 2Q .0521, a notice of the DRAFT Title V Permit will be placed on the NCDAQ website. The notice will provide for a 30-day comment period with an opportunity for a public hearing. Copies of the public notice will be sent to persons on the Title V mailing list and EPA. Pursuant to 15A NCAC 2Q .0522, a copy of the proposed permit (in this case, the draft permit) will be provided to EPA for their 45-day review. Also pursuant to 2Q .0522, a notice of the DRAFT Title V Permit will also be provided to each affected State at or before the time notice provided to the public under 2Q .0521 above. A copy of the final permit will also be provided to the EPA upon issuance as per 2Q .0522.

10. Conclusions, Comments, and Recommendations

- The application does not include any new control devices. Hence, PE seal requirement is not applicable pursuant to 2Q .0112.

- The application does not include any new or modified emissions sources and/or control devices. So, local zoning consistency determination requirement is not applicable pursuant to 2Q .0507(d).

- The draft permit was emailed to the Raleigh Regional Office for review and comments on November 12, 2015. Charles McEachern emailed on December 3rd with one comment with respect to the department's name (NCDEQ vs. NCDENR) in the draft permit. This change will be performed.

- The draft permit was emailed to the applicant for review on November 12, 2015. Patrick Cavanagh emailed on November 30th with the following comments. The DAQ response to each comment is also provided below.

  Company Comment 1

  "I don't like the fact that they identify sources as subject to NSPS requirements in the sections under 2.1 but don't identify the correct NSPS limits until they get to Section 2.2. Confusing to have 2 sets of apparent opacity limits with the ones in Section 2.2 for NSPS being the lower actual opacity limits. Suspect they will not change this since it is likely part of their standard template but we could ask."

  DAQ Response:

  It seems that the Permittee has misunderstood this issue. The DAQ regulation prohibit applying the visible emission (VE) standard in 2D .0521 to any emission source, if the same source is subject to a federal NSPS VE standard (such as VE limit in Subparts OOO, UUU). In general, the source is subject to either the VE limit in 2D .0521, or subject to the VE limit in NSPS OOO or UUU, as applicable.

Separately, all applicable federal NSPS requirements under Subparts OOO and UUU including applicable VE limits are housed in a centralized place in Section 2.2.A. The DAQ believes that this is a more streamlined and clear approach to inform the permittee about its obligations.

Company Comment 2

"Section 1: ES-36 Boric Acid Day Bin has now been converted to Cement which will require an amendment (Rachel from Environ is reviewing necessary submittal for the change)."

"Section 2.2 B.2.a ES-36 converted to Cement from Boric Acid should be included as an applicable source with the associated TAP limits."

DAQ Response:

The DAQ will need the completed application forms B (Form B, Form B6) for cement day bin. Form C1 for the associated control device also needs to be completed. In addition, the emissions calculations for all common pollutants (PM, PM10, PM2.5) and any air toxics pollutants (hazardous air pollutants, air toxics regulated under the state program), which are potentially emitted from this source, do need to be characterized and properly estimated. Finally, the Permittee needs to include in a response the applicable regulations and emission standards (limits) for this source.

Upon receipt of the above required information, DAQ will evaluate if there is any need for additional modeling demonstration. Likely, DAQ will not need any modeling demonstration for the state air toxics standpoint, but, the DAQ cannot finalize on this issue until it receives this requested information.

The DAQ has received the completed forms (Forms B, B6 and C1) for the cement day bin and associated control device, emission calculations, and regulatory applicability discussion, from the applicant on January 7 and 12 2016.

PM emissions from manual loading and unloading of cement into and from super-sacks are expected. The Permittee has estimated the potential emission rate of 0.29 tons/yr using a typical grain loading 0.01 grain/dscf (at the outlet of the bagfilter) and the maximum exhaust flow rate of 760 scfm for the cement day bin. The Permittee has also estimated potential emissions rates of some of the NC-regulated air toxics which are expected to be emitted from the operation of cement day bin. Their emissions rates have been based upon the above PM emission rate and the concentration of a given pollutant in cement. The estimated emissions for air toxics are as follows:

Arsenic - 0.0145 lb/yr
Beryllium - 0.00179 lb/yr
Cadmium - 0.000298 lb/yr
Chromium (vi) - 0.00653 lb/yr
Mercury - 0.0000343 lb/yr
Manganese - 3.36×10^{-11} lb/yr
Nickel - 0.0334 lb/yr

The applicable regulations are 2D .0515, .0521 and .1100, and 2Q .0711.

2D .0515

For process rates greater than 30 tons per hour, allowable particulate emissions are calculated using the following equation:

$E = 55.0 * (P)^{0.11} - 40$

and for process rates less than 30 tons per hour, allowable emissions are calculated using the following equation:

$E = 4.10*(P)^{0.67}$

where, E = allowable emissions (lbs/hr); and
P = process weight rate (tons/hr).

The process rate (cement unloading rate) is 0.36 tons/hr; thus, the allowable PM emission rate is estimated to be 2.07 lb/hr. The potential to emit for the source, as stated above, is only 0.000033 ton/hr (equals to 0.29 ton/yr). Hence, compliance with the requirement in 2D .0515 is expected.

To comply with the Part 70 periodic monitoring requirement, the Permittee will be required to perform monthly visual inspection of the system ductwork and material collection unit for leaks, and annually (for each 12 month period following the initial inspection) internal inspection of the bagfilter's structural integrity. The Permittee will be required to keep records in a logbook for all inspections and maintenance performed on a bagfilter. With respect to reporting, the Permittee will be required to submit the results of any maintenance performed on the bagfilter within 30 days of a written request by the DAQ. Finally, the Permittee will be required to submit semi-annually summary report of monitoring and recordkeeping activities.

2D .0521

Visible emissions from cement day bin are subject to an opacity limit of 20%.

The Permittee will be required to observe visible emissions once per month. The monthly observation must be made for each month of the calendar year period. The Permittee will be required to establish "normal" within 30 days of effective date of this initial Title V permit. If visible emissions from the source are observed to be above normal, the Permittee will take appropriate steps to correct above-normal emissions or demonstrate that percent opacity from the source is below the 20% standard using Method 9 for 12 minutes.

Results of the monitoring shall be maintained in a logbook. It shall record the date and time of each recorded action, the results of each observation and or testing along with any corrective action taken, and results of corrective action.

The Permittee will be required to submit a summary report of visible emissions observations on a semi-annual basis by January 30th of each year for the preceding six-month period (July through December) and by July 30th of each year for the preceding six-month period (January through June).

2D .1100 and 2Q .0711

As per the requirements in 2D .1100 and as discussed in Section 6.3 above, , the facility is currently approved to emit certain NC-regulated air toxics (arsenic, benzene, formaldehyde, and non-specific chromium (vi)) in the amounts, specified in the current permit. The permit also includes a procedural requirement for obtaining an air toxics permit prior to the facility-wide actual emissions of benzo(a)pyrene, cadmium, n-hexane, manganese, mercury vapor, soluble chromate compounds as chromium vi, or toluene, exceeding the associated toxic air pollutant emission rates (TPER) in accordance with 2Q .0711.

The Air Quality Analysis Branch (AQAB) memorandum dated January 30, 2013 approving the emissions limits in the current permit indicates that the predicted maximum impacts for these pollutants range between 3 percent (formaldehyde) to 66 percent (benzene) of the associated AALs. With a negligible increase in emissions for air toxics expected to be emitted, as described above, from the operation of cement day bin, it is DAQ's judgement that the impacts after this modification will still remain below the associated AALs and no new modeling analysis is required for currently modeled pollutants; arsenic, benzene, formaldehyde, and non-specific chromium (vi). In addition, the facility-wide emissions of cadmium, mercury, manganese, and nickel will continue to remain below the associated TPERs, even after including a negligible increase in emissions from operation of a cement day bin.

In brief, no changes to the existing air toxics requirements are required.

2Q .0317

As indicated in Section 5.8 above, the existing boric acid day bin (ES-36)'s PTE is 0.29 tons/yr. Also, as stated above, this day bin has been converted to store cement (ES-36) instead of boric acid with the PTE remaining at 0.29 tons/yr. Because the emissions of ES-36 are currently limited under the existing PSD avoidance limits for both PM_{10} and $PM_{2.5,}$ as discussed in Section 6.2 above, the emissions of cement bin will continue to be regulated under these existing limitations to avoid PSD.

Company Comment 3

"2.1 K.2.d. contains sources which do not appear to have applicability under this section "(ID Nos. ES-02, ES-09, ES-10, and ES-42)"

DAQ Response:

Agreed. This is a mistake and the DAQ will correct it.

Company Comment 4

"Drop "A" from 921-Ashore Rd. This was a temporary address. It is now just 921 Shore Rd. (Cover Letter)".

DAQ Response:

The DAQ will make this change in the permit documents.

Company Comment 5

"ES-47 and ES-49 need to add "ICBM to the title to differentiate it from ES-25 and ES-28.(Page 4)."

DAQ Response:

Agreed. The DAQ will include prefix "ICBM" in the source descriptors for each of these sources.

Company Comment 6

"ES-36 needs to be renamed "Cement Day Bin. (Page 4)"
"Rename Boric Acid Day Bin to Cement day Bin. (Page 18)"
"Add ES-36 to list of TAPs. (Page 19)"
"Does ES-36 need to be added to 2.2 A? (Page 31)"
"ES-36 needs to be added to Table for Control of Toxic Air Pollutants. (Page 35)"
"ES-36 needs to be added to page 30. (Taps)"

DAQ Response:

Refer to the DAQ response for comment 2 above for cement day bin ES-36. If DAQ determines to require a new air toxics demonstration for cement day bin emissions, Section 2.2 B.2 will accordingly be revised in the permit. The Permittee will be required to provide the specific information for ES-36 as stated above. The DAQ will then, determine the type of changes needed to be made to the draft permit documents for ES-36 cement day bin

Company Comment 7

"ES-01-A PM listed as .764 Tons/Year. On original application was 1.67T/Y."
"ES-02-A PM listed as .764 Tons/Year. On original application was 1.67T/Y."
"ES-09 PM listed as 5.39 Tons/Year. On original application was 6.47T/Y."
"ES-10 PM listed as 5.39 Tons/Year. On original application was 6.47T/Y."
"ES-16 PM listed as .14 Tons/Year. On original application was 0.57T/Y."

"ES-40 PM listed as 4.89 Tons/Year. On original application was 9.91T/Y."
"ES-40 listed as 3.63 Tons/Year. On original application was 71.95 T/Y."
"ES-G1 listed as 0.2 Tons/Year. On original application was .6T/Y."

DAQ Response:

It seems that the permittee has misunderstood the source for the emissions data included in the application review. The estimated PM emissions as included in the application review are based upon the information provided in the Appendix B to the application. They are not based on any application forms B.

Company Comment 8

"Section 3 JJ.4. Would request that the timing be extended to 45 or 60 days for report submittal after sampling."

DAQ Response:

All General Conditions included in Section 3 of the draft permit are the same for every title V permittee in NC. The DAQ cannot make any changes to any of the General Conditions. With respect to the testing protocol stipulation JJ in Section 3, the DAQ review timeframe of 45 days before conducting the stack test is based upon the regulatory requirement in 15A NCAC 2D .2602(c). No changes can be made to this stipulation language.

- This permit engineer recommends issuing the initial Title V permit after the completion of public comment and EPA review periods.